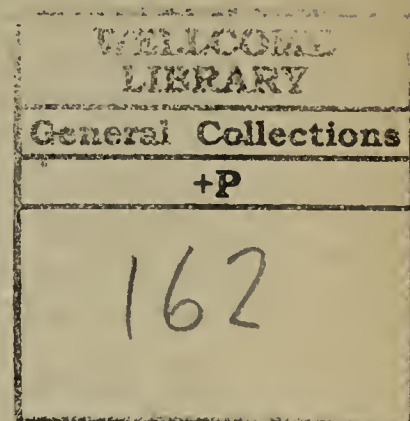


Dr. F. W. Barry's Report to the Local Government Board on
the General Sanitary Circumstances of the Walker Urban
District.

GEORGE BUCHANAN,
Medical Department,
August 22, 1883.

Area, 1,200 acres ; rateable value (1882), 29,508*l*.
Population (1871) 8,888, (1881) 9,527 ; inhabited houses (1881), 848.
Persons per house (1881), 11·2 ; persons per acre (1881), 7·9.



I. *General Description*.—Walker is situated at the south-west angle of the Tynemouth Union, in the parish and registration sub-district of Long Benton. It is somewhat triangular in form, and is bounded on the west by the borough of Newcastle-on-Tyne, on the north by the rural portion of Long Benton parish and by the Wallsend Urban Sanitary District, and on the east by the River Tyne.

The bulk of the inhabitants live in that portion of the district known as Low Walker, which is more or less parallel with the river. The chief industries are iron and ship-building works. Formerly a large number of the inhabitants were engaged in alkali manufacture, but these works have been discontinued. The population has increased 7·2 per cent. between the censuses of 1871 and 1881.

II. *Streets and Dwelling-houses*.—A considerable number of the houses in Walker are well constructed, and occupy the sides of well-formed streets. A great many are, however, built and placed in a manner which must prejudicially affect the health of the inhabitants. In many instances they are grouped round close and unpaved yards, in which the want of sufficient ventilation is aggravated by the presence of excremental and other nuisances which foul the air. Many of the streets, particularly the back streets in the district, are as yet neither properly made, paved, nor channelled. The following are particularly noticeable: Back Street, on the north side of New Road ; Back Church Street, opposite the church ; Pit Street ; and the back streets on either side of Byker Street. At the Point are some very old houses situated at the foot of the old alkali heaps, with unpaved sloppy yards, which at the time of my visit were in a most filthy condition. A number of old pit houses still exist in this district, as, for example, those at the Hemmels, which have badly paved confined yards and uncovered privy middens 5 feet from the back door, and are without any means of drainage, the inhabitants being obliged to throw their slops either into the ashpits or on the roads. Most of the more modern houses are built in flats. Formerly there were a considerable number of back-to-back houses in this district, but these have been improved by throwing two houses into one, thus securing through ventilation.

III. *Water Supply*.—Walker is supplied with water by the Newcastle and Gateshead Water Company. In the case of the newer houses the water is laid on to a tap in the back yard of each house. In the older parts there are standpipes, common to two or more houses. The supply is said to be constant, but there are no means for the admission of fresh air into the mains during temporary stoppages.

IV. *Sewerage and Drainage*.—Lengths of sewers have been laid down at various times, in some instances by the Sanitary Authority and in others by private owners. The sewage is in all cases discharged at one or another point into the Tyne. The sewers themselves are of varied construction, some being of brick and others of pipes. The newer sewers are ventilated by means of surface grids placed at the manholes, but the sewers generally throughout this district are apparently very inefficiently ventilated. There are no proper arrangements for flushing, but the Surveyor states that portions are flushed once or twice a year. Certain populous parts of the district are still without any proper means of sewerage, for example, Byker Street and Church Street. In the former of these, in addition to the houses, there is an elementary school, which is stated to have an average attendance of 450 scholars. The house drainage is chiefly effected by means of sinks placed in the back yards. A few of the houses have sinks in their kitchens, which are in direct communication with the drains.

Some houses have no means of drainage whatever, and the inhabitants are obliged either to throw their slops into the road or into the middens. Examples of these are to be found at The Hemmels, East Pit Houses, &c. A number of ashpits have been connected with the sewers, a course of procedure which will undoubtedly in time lead to the silting up of the sewers, and which, from the putrid nature of the liquid running in from the middens, will give rise to most offensive emanations from the ventilators. In such houses as have been furnished with waterclosets the soil pipes do not appear in any instance to have been efficiently ventilated. The utmost that has been considered necessary is the carrying of a pipe of small diameter from the highest point of the soil pipe to the roof. The byelaws at present possessed by the Sanitary Authority will, if properly carried out, enable them in future to enforce an efficient method of ventilation both of soil pipes and house drains.

V. *Excrement and Refuse Disposal*.—The uncovered midden privy constitutes the usual means of closet accommodation in this district, and, as elsewhere in the Tyne-mouth Union, is so constructed and managed as to give rise to very considerable nuisance. The middens are nearly all unroofed and sunk below the level of the ground, and frequently, in addition to the rain falling into them, they receive all the slops and liquid refuse of the household. Hence wetness and rapid decomposition of the contents, together with saturation of the soil near the foundations of houses, are ensured. The nuisance and danger to health from these middens is very great, especially when they are situated in close proximity to the windows of houses and to highways. Many of them are of enormous size. The privies are almost universally constructed so as to prevent the proper mingling of ashes with excreta. Many of the middens are in a most dilapidated condition, and in consequence the ashes and refuse overflow into the yards, which are, as already noticed, frequently unpaved. Several were noticed which were leaky, and in consequence the liquid filth was running across the roadway.

The following examples may be cited from a list of similar cases:—

Low Walker. Porter's Buildings, Fisher Street; new houses built in flats. Large uncovered privy middens; leaky ashpits; liquid filth oozing into back street.

Western Glower. Houses furnished with enormous ashpits; doors for emptying them very high above the level of the street, and in consequence the outer wall in the street is coated with filth; a most disgusting sight, and a great nuisance.

The Corner. A huge privy midden of about 1,000 cubic feet capacity. Ashes and filth all over the yard. The closet attached to the midden in a most disgusting state, the floor, seat, &c. being covered with excrement.

Back Victoria Street. A number of leaky ashpits noticed.

The Point. Dilapidated middens. Filth overflowing into unpaved yards. Considerable nuisance stated to be caused here from the sulphuretted hydrogen evolved by the decomposition of the old alkali heaps.

The Authority by their present byelaws have ample powers to deal with the construction of these receptacles, and it is much to be regretted that in some property that has been recently erected, since the byelaws came into operation, these regulations have not been enforced. In the property in question, the midden was so constructed as to be common to four closets, and measured 18 feet in length, 6 feet in width, and 4 feet in depth, which represents a capacity of 432 feet. The byelaws limit the size of middens to 8 cubic feet. Further comment on this is unnecessary.

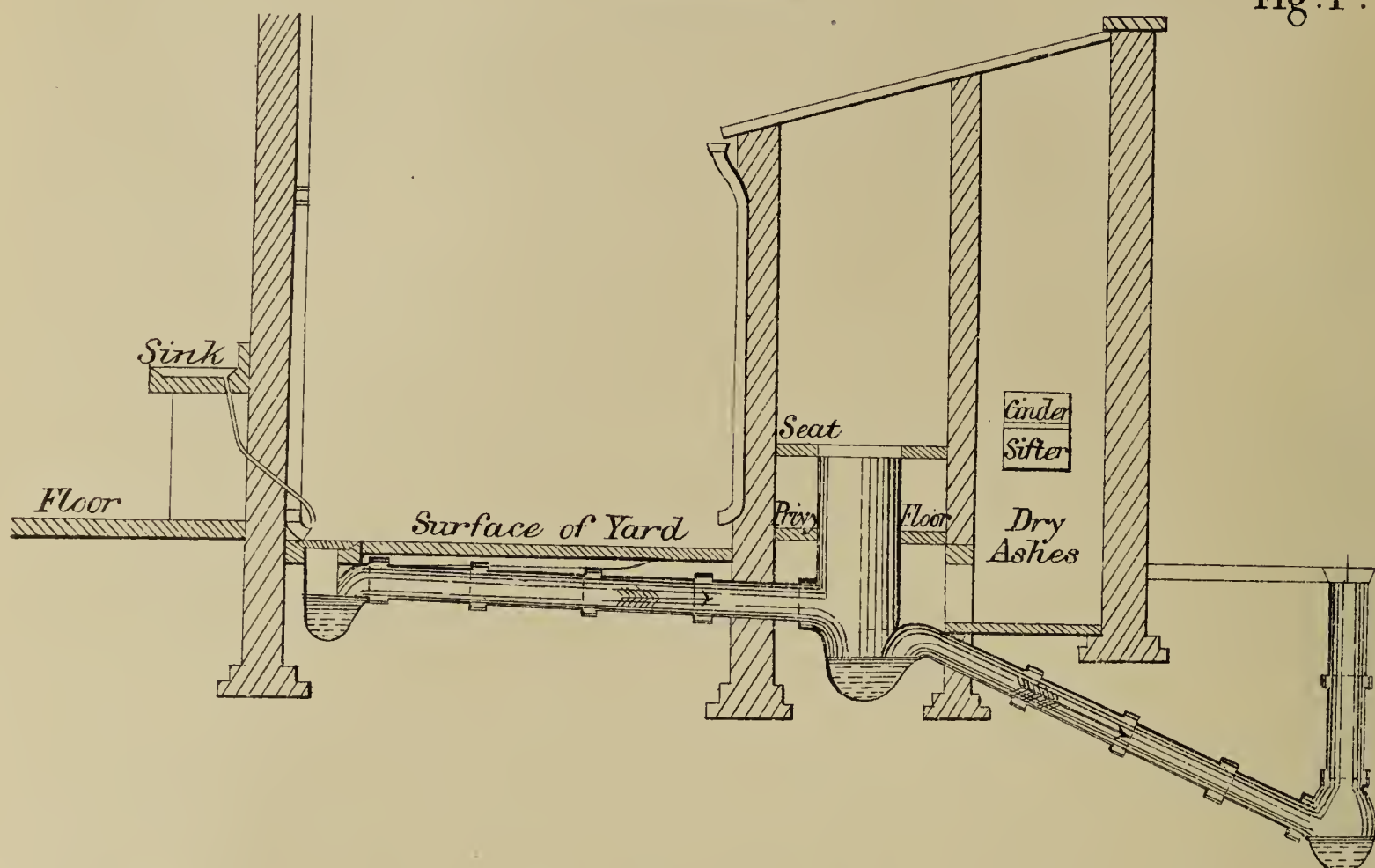
The Sanitary Authority undertakes the removal of the midden contents, but from the accumulations which existed at the time of my inspection it was evident that this had been very badly carried out. There can be no question that the inhabitants themselves are not very anxious to have their receptacles cleared oftener than is absolutely necessary, as, from the present construction of the middens, there is undoubtedly more nuisance caused to the surrounding houses when, after scavenging, fresh excreta and the sodden walls of the middens are exposed to the sun and rain than when they are covered up by large heaps of ashes and dry refuse. Considerable difficulty also arises in this district in effecting sufficiently frequent scavenging, owing to the large amount of waste coal which the inhabitants obtain at a very low price. The method of scavenging also demands special notice. The contents of the middens, which, as already stated, are always in a more or less sloppy condition, are thrown out, not into the cart, but into the back street, whence they are afterwards (in some cases, it is stated, after an interval of two or three days) carted away, although this method of



FOWLER'S PATENT SELF ACTING WATER CLOSET .

SECTION .

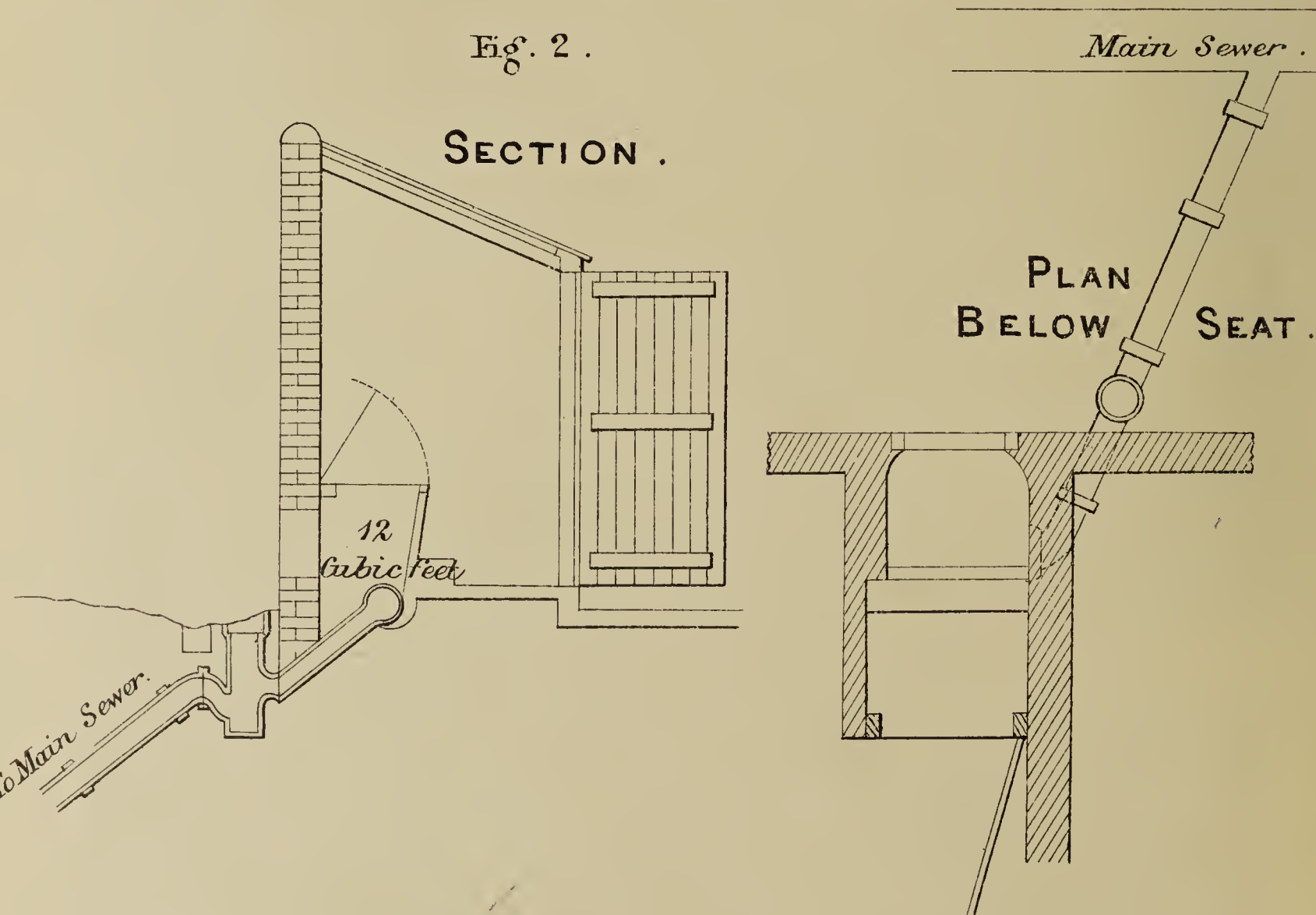
Fig. 1 .



FORM OF ASH CLOSET IN USE IN SOUTH SHIELDS .

Fig. 2 .

SECTION .



Methods of Excrement and Refuse Disposal recommended by the Walker Urban Sanitary Authority .

procedure is directly prohibited by the Local Board's byelaw, No. 5, with regard to nuisances. The result of this practice in the defective and unpaved streets may be better imagined than described. The refuse, which from its admixture with coal is said to be unfit for the farmer's use, is taken to the depôts of the Sanitary Authority, where there is now a very large accumulation. Its ultimate disposal is a matter of considerable difficulty, and there is no question that sooner or later it will become necessary either to convey it to sea in barges or to artificially destroy it. The total cost of the removal of refuse by contract in this district is stated to be 475*l.* per annum.

The various nuisances arising from the defective construction of closets having been repeatedly brought before the Sanitary Authority by the Medical Officer of Health, a Special Committee was appointed in the spring of 1882 to consider and report upon the whole question of excrement and refuse disposal. After visiting Hebburn, Jarrow, and South Shields, and examining the methods in vogue in those places, this committee presented a report in April 1882, which concluded with the following recommendations, which were adopted by the Sanitary Authority:—

- (1.) "That, in order to obviate the often repeated complaints of the Medical Officer, fair grounds for which prevail in some parts of the township, all plans of new houses submitted to your approval ought to show that Fowler's closet will be put in, if the sewers will permit, and, where not, the ash closet as in use in South Shields."
- (2.) "That a circular be prepared, addressed to all owners of private property in this district, pointing out the sanitary and ultimate economical advantages of both systems before alluded to for storing or removing the most offensive and dangerous portions of house refuse, and impressing such owners of property the necessity of an immediate alteration of their premises, with a view that so desirable a work may, without unnecessary delay, be accomplished throughout the whole of your sanitary district."

The Committee expressed a preference for Fowler's closets, on the ground that they possessed the following advantages:—

- (1.) That fewer would be required;
- (2.) That there would be no offensive substance to be handled or carted through the streets to the depôt;
- (3.) That as the house ashes are not a nuisance they could be deposited wherever space might be found for them.

A section showing the arrangements of a Fowler's closet will be found in Fig. 1, and of the South Shields' closet in Fig. 2.

From Fig. 1 it will be at once seen that the Fowler's closet does not possess any flushing arrangement at all, but merely a trickling of water from the gully trap, which receives the waste from the scullery sink. It is much to be regretted that the Local Authority has recommended this form of closet, for without regular flushing at the time of use there is a certainty of the excrement adhering to the sides of the pan, and, further, of its being detained both in the pan and the branch drains for an undue length of time. Decomposition will naturally ensue, and offensive sewer air be generated, which will cause nuisance both in the closets themselves and at the ventilators in the streets. In two or three which have been put in, and which I examined, there certainly was a most offensive smell in the closets. It is further to be noted that this is a form of closet which cannot be legally erected under the byelaws of the Sanitary Authority, being in distinct violation of clause No. 66, which very properly requires that every watercloset shall be furnished with a cistern for flushing. With regard to the first of the advantages claimed for the Fowler's closet by the Committee, I would note that it is difficult to understand their reasons for saying that a smaller number of these would be required than of others. The other points urged in favour of these closets, that the house refuse remaining after the removal of the excreta is innocuous, and that it may be disposed of anyhow (by implication for the foundations of houses) are undoubtedly fallacies, for as it generally contains some of the animal and the vegetable refuse of the household it certainly cannot be regarded as harmless.

As to the South Shields' closet, which is recommended as an alternative plan, it will be seen from Fig. 2 that it is proposed to connect the ash middens directly with the public sewers, a course of procedure which, when practised, has, as I have already remarked, invariably led to the silting up of the branch drains, and, from the putrid nature of the liquid running in, to the generation of offensive sewer air. It is further

in direct violation of byelaw No. 76 of the Sanitary Authority, which absolutely prohibits any such connexion being made. It is the more to be regretted that any such recommendations have been put forward by the Sanitary Authority, as a strict adherence to the provisions laid down in their own byelaws would lead to satisfactory results.

VI.—*Slaughter-houses, &c.*—There are said to be some 12 or 13 slaughter-houses in Walker. These, at the time of my inspection, were neither registered nor licensed, but I was given to understand that the Local Board were taking active measures to have this very necessary work carried out. With only one or two exceptions slaughtering is carried on in the open shops, to the amusement of the children in the neighbourhood. These shops in most instances open directly into the rooms of the dwelling-house; the offal and refuse are thrown on the midden, and some idea may be formed of the nuisance which must arise from this when we consider the very perfunctory manner in which scavenging is performed in this district.

VII.—*Lodging-houses.*—There are no common lodging-houses in Walker, but many houses are said to be overcrowded, owing to the number of artisans who are taken in as lodgers, and I was told that in some cases the rooms are in continual use for day and night shift men.

Since the date of my inspection the Local Government Board have sanctioned the application to Walker of section 90 of the Public Health Act, to enable the Sanitary Authority to make byelaws with regard to houses let in lodgings other than common lodging-houses.

VIII.—*General Sanitary Administration.*—The Local Government Act was adopted in Walker in 1866. Since the formation of the Board the following loans have been sanctioned:—

| | £ |
|---|---------------------------------|
| 1867 - - - - - | 2,600, for general purposes. |
| 1876 - - - - - | 4,390 „ „ |

Walker, in conjunction with Long Benton Parish, was visited and reported upon by Dr. Airy in 1872 in consequence of the prevalence of diphtheria. The chief points to which he then drew attention as needing reform were the defective construction and insufficient ventilation of the houses, the filthy condition of the privies, and the want of any systematic plan for the removal of excrement and filth. As already noticed, the defective condition of the houses has been to some extent remedied, but the state of the privies and the manner in which the removal of the refuse is effected, and its ultimate disposal, leaves much still to be desired.

Many of the points adverted to in this report, especially those with regard to the removal and disposal of excrement and the non-enforcement of the byelaws, indicate an exceptionally lax system of sanitary administration, which must have the most injurious effects upon the health of the population.

The *Medical Officer of Health* receives a salary of 70*l.* per annum, half of which is repaid from the moneys voted by Parliament. He has apparently made himself thoroughly acquainted with the sanitary circumstances of the district, and in his monthly and annual reports to the Sanitary Authority he has drawn attention to the dangers to health arising from the principal sanitary defects noticed in this report. He receives a monthly return of deaths occurring in his district, but no immediate notice as to any deaths from infectious diseases, and in consequence it frequently happens that when a death from infectious disease occurs he does not hear of it for three or four weeks afterwards, when it is too late to take any precautionary measures. Cases of infectious diseases (other than those occurring in his own practice) are, as a rule, only accidentally heard of, and even when they do come under the notice of the Medical Officer of Health, the means at his disposal are not such as to be of any material value in checking their spread, for the Authority has made no provision for the isolation of such diseases or for the efficient disinfection of infected clothing, bedding, &c., and there is also no mortuary accommodation.

The *Inspector of Nuisances* gives his whole time to the duties of his office, and receives an annual salary of 70*l.* (half of which is repaid from the Parliamentary Grant) for his services. The present officer has held his appointment for 10 years, but I regret to have to state that the duties of his office appear to have been very laxly performed, the work of both inspection and abatement of nuisances having apparently been very greatly neglected. Numerous faulty conditions to which I called his attention which must have been in existence for months, if not for years before my visit, had

apparently, until then, been unnoticed by him, and his only reply to my questions as to why these matters had not been reported to the Sanitary Authority was that notices should be served. With regard to middens his main anxiety appeared to be that they should be made "big enough."

The Surveyor to the Sanitary Authority receives a salary of 110*l.* per annum.

A code of *Byelaws*, with regard to—

- (1.) Nuisances ;
- (2.) Common lodging-houses ;
- (3.) New streets and buildings ;
- (4.) Slaughter-houses ;

has been recently acquired by the Sanitary Authority, which follows closely the model code issued by the Local Government Board.

On the 11th of April I conferred with the Sanitary Authority with regard to (1) hospital accommodation ; (2) the recommendations of the Local Board, already alluded to, with regard to the Fowler's closets and the connexion of ashpits with the sewers. With regard to hospital accommodation I urged the Sanitary Authority to accept the proposal recently made to them by the Newcastle Corporation, who, having lately decided to erect an infectious diseases hospital within the boundaries of the Walker district, offered at the same time to make provision for any cases which might arise within the district of the Walker Local Board. The position of the proposed site is an admirable one for the purposes of the Walker Authority, and such a combination would be undoubtedly of great advantage to the district. At the conference I further explained the disadvantages, from a sanitary point of view, which would be incurred if either the construction of waterclosets unprovided with adequate means of flushing or the making of connexions between the ash middens and sewers were allowed.

IX.—*Mortality Statistics and Prevalence of Disease*.—The following table shows the mortality statistics for the Urban Sanitary District of Walker, for the 10 years 1873–1882.

MORTALITY STATISTICS for the URBAN SANITARY DISTRICT of WALKER,
for the 10 Years, 1873–1882.

| Year. | Esti- mated Popu- lation. | Total Deaths from all causes registered in the District. | Total Deaths corrected for Workhouse. | Corrected Death Rate per 1,000 living. | Deaths from | | | | | | | Death Rate from Diseases in Columns 5–11 per 1,000 living. | Births. | Deaths under 1 Year of Age. | Deaths under 1 Year of Age per 1,000 Births. |
|-----------------------------------|--|---|---|---|-------------|----------|-------------|-------------|-----------------|----------|------------------------------|--|---------|-----------------------------|---|
| | | | | | Small-pox. | Measles. | Scarlatina. | Diphtheria. | Whooping Cough. | "Fever." | Diarrhoea, Dysentery, &c. | | | | |
| Columns - | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. |
| 1873 - | 9,012 | 227 | 229 | 25·4 | — | 1 | 27 | 1 | 3 | 5 | 26 | 7·0 | 407 | 51 | 125 |
| 1874 - | 9,075 | 240 | 244 | 26·9 | — | — | 36 | 1 | 7 | 8 | 20 | 7·9 | 437 | 79 | 180 |
| 1875 - | 9,138 | 175 | 177 | 19·4 | — | — | 6 | — | 7 | 2 | 20 | 3·8 | 382 | 64 | 167 |
| 1876 - | 9,201 | 180 | 186 | 20·2 | — | 2 | 18 | 2 | 5 | 1 | 9 | 4·0 | 397 | 50 | 126 |
| 1877 - | 9,266 | 179 | 185 | 20·0 | — | 1 | 7 | 2 | 4 | 2 | 8 | 2·6 | 366 | 54 | 147 |
| 1878 - | 9,330 | 194 | 199 | 21·3 | — | — | 37 | — | 9 | 8 | 8 | 6·6 | 357 | 42 | 117 |
| 1879 - | 9,395 | 139 | 142 | 15·1 | — | — | 7 | — | — | 2 | 3 | 1·3 | 347 | 50 | 144 |
| 1880 - | 9,460 | 212 | 217 | 22·9 | — | 10 | 3 | 2 | 15 | 3 | 12 | 4·7 | 381 | 68 | 178 |
| 1881 - | 9,527 | 154 | 158 | 16·6 | 1 | — | 1 | 1 | 1 | 1 | 5 | 1·0 | 403 | 48 | 119 |
| 1882 - | 9,593 | 234 | 242 | 25·2 | 2 | — | 62 | 2 | 2 | 9 | 15 | 9·6 | 400 | 59 | 147 |
| Mean of 10 years, 1873–1882 | 9,299 | 193 | 198 | 21·3 | 0·32 | 1·51 | 21·95 | 1·18 | 5·71 | 4·41 | 13·54 | 4·8 | 388 | 56 | 145 |
| Mean of 10 years, 1873–1882 | { Long Benton Registra- tion Sub-district - } | | | | 21·6 | 0·16 | 1·68 | 17·13 | 0·70 | 5·42 | 5·48 | 10·73 | 4·1 | — | 151 |
| | { Tynemouth Registra- tion District - } | | | | 22·0 | 0·05 | 2·48 | 13·25 | 0·72 | 4·77 | 4·42 | 10·16 | 3·6 | — | 155 |
| | { England and Wales - } | | | | 20·8 | 0·79 | 3·76 | 6·94 | 1·27 | 5·03 | 4·22 | 8·45 | 3·0 | — | 145 |

Rates per 10,000 of the population per annum.

The mean general death rate from all causes has been 21·3 per 1,000 living, a rate of mortality which is not only in itself in excess of that which would be expected to obtain in an open district such as Walker, but which is evidently unnecessarily high, as it is to an important extent made up of diseases (such as scarlatina, enteric fever, &c.) which are within the control of efficient sanitary administration. The general death rate was above the average in 1873 (25·4), 1874 (26·9), 1878 (21·3), 1880 (22·9), and 1882 (25·2), and in each of these years the excess was directly due to the prevalence of one or other of the so-called zymotic diseases. It was due in 1873 to scarlatina and diarrhœa; in 1874 to scarlatina, diarrhœa, and enteric fever; in 1878 to scarlatina and enteric fever; in 1880 to measles, whooping-cough, and diarrhœa; and in 1882 to scarlatina, diarrhœa, and enteric fever.

The death rate from fever, which was *enteric fever*, has been 4·4 per 10,000 living, a rate slightly below that for the whole registration district. During the same period of 10 years the average annual death rate from fever was 3·4 in London, 4·2 in England and Wales, and 4·5 in the large towns and cities of England. With regard to this mortality we find that, contrary to usual experience, there has been no falling off in the rate during recent years in Walker, as many as 9 deaths occurring in a population of under 10,000 persons during 1882. This disease is, probably more than any other of its class, due to preventible causes, and the Authority will do well to consider what numerous opportunities exist in their district for that form of poisoning with which it is invariably associated, viz., with human excrement, and which has led to the production, in 1874, 1878, and 1882, of a mortality more than double that which obtained from the same cause in the large towns and cities of England. The rates of mortality from diphtheria and diarrhœa, diseases which are also frequently associated with filthy surroundings, were in excess of those which obtained in the whole registration district during the decennial period.

Scarlatina, however, is the infectious disease of all others which has proved the most fatal, and is one from which the district is apparently never entirely free, deaths from this cause having been registered in each of the 10 years under review. The average annual mortality during the 10 years, 1873–1882, has been at the rate of 21·9 per 10,000 living, a mortality which is nearly 9 per 10,000 higher than that of the whole registration district (13·2), and more than thrice that of England and Wales (6·9) during the same period. It was most fatally epidemic in 1873, 1874, 1876, 1878, and 1882, when 27, 36, 18, 37, and 62 deaths were registered from this cause respectively, in a population of under 10,000 persons. In 1881 the disease seemed to have reached its minimum, only one death from it having been registered, but early in January 1882 it began to spread, apparently from several distinct centres, and in the absence of any means for the isolation of cases, or for the efficient disinfection of clothing, bedding, &c., it continued to rage with unabated vigour until the end of the year. It was most fatal during the third and fourth quarters. The Medical Officer of Health had knowledge of 151 cases, but there is no doubt that this is very far below the actual number, as the people do not consider scarlatina a disease of sufficient importance to warrant the calling in of medical advice unless the attack is exceptionally severe. The following table shows the number of cases coming to the knowledge of the Medical Officer of Health in each month, together with the number of deaths in each quarter:—

| Month | - | - | Jan. | Feb. | March. | April. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. | Year. |
|--------|---|---|------|------|--------|--------|------|-------|-------|------|-------|------|------|------|-------|
| Cases | - | - | 8 | 14 | 7 | 10 | 10 | 9 | 15 | 23 | 18 | 15 | 13 | 9 | 151 |
| Deaths | - | - | 3 | | | 12 | | | 26 | | | 21 | | | 62 |

When I visited the district in April of the present year, the disease had apparently again become dormant, probably from the want of susceptible material, but there is little doubt, from former experience in this district, that as soon as certain conditions are fulfilled, one of which is the accumulation of susceptible individuals, the disease will again waken into activity. The chief facts which I was able to ascertain with regard to the outbreak were: (1) that the disease was not confined to any particular locality, but was apparently diffused throughout the district; (2) that it chiefly affected children between 1 and 10 years of age; and (3) that its fatality was apparently influenced to a marked degree by the sanitary and social surroundings of the patients. The localities in which the greatest proportion of deaths occurred were those in which

some of the greatest opportunities for filth poisoning existed, either directly from middens and the like, or from ill-ventilated and crowded dwellings. The chief method by which scarlatina is spread is undoubtedly by the unrestricted personal intercourse which takes place between the healthy and the sick ; and in Walker, from the number of houses built in flats and around common yards, exceptional facilities exist for its spread by these means, even if the inhabitants exercised the greatest care to avoid such intercourse. Here, however, as elsewhere in the Tynemouth Registration District, the greatest ignorance and apathy exists amongst all classes as to the dangers of such communication. Notwithstanding the known fatality of scarlatina, it is looked upon as a necessary evil of childhood, and a child who has not suffered from it is considered to be as much of an anomaly as if it had never had any milk teeth. As an instance of the culpable carelessness of the people, it may be stated that, on the death of a child from scarlatina, it is a common occurrence for the parents of the deceased to invite its old playmates to act as pall-bearers. These children are usually dressed in their best (often in white) clothes, and assemble in the room where the coffin stands, and in which it frequently happens that other members of the family are lying ill of scarlatina, and there remain together with a crowd of adults for a lengthened period, during which they are fed on buns, cake, &c. before proceeding to the funeral. A more effectual method of spreading the disease could scarcely be imagined.

In addition to the above diseases small-pox was introduced into the district in August last year from Newcastle. The first case, which occurred in Byker Street, the Medical Officer was able to isolate in the house where the patient was living, but in the following month it was again brought into Walker, and this time into a part of the district where it was impossible (in the absence of a special hospital) to secure efficient isolation. The disease rapidly spread by personal intercourse, and up to the end of May of the present year 93 cases were known by the Medical Officer of Health to have occurred, of which three had proved fatal. Here, again, if the Sanitary Authority had had ready any means by which the first cases could have been efficiently isolated, the disease might have been checked at the outset.

FRED. W. BARRY.

July 1883.

RECOMMENDATIONS.

(1.) It is of the first importance that, with a view to prevent the spread of infectious diseases in the district, the Sanitary Authority should have in readiness (a) some permanent means for the immediate isolation of persons found suffering from infectious diseases, and who in their own homes are without proper lodging and accommodation ; (b) some apparatus for the efficient disinfection of infected bedding, clothing, &c. ; (c) a mortuary for the reception of the dead in cases where their being retained at home would endanger the health of the living. It will possibly be found advantageous to make these provisions in conjunction with the Newcastle Urban Sanitary Authority.

(2.) The disinfection, by fumigation or otherwise, of dwellings invaded by scarlet fever, small-pox, &c., and of articles therein likely to retain infection, should in every case be carefully carried out under medical supervision.

(3.) Persons exposing themselves in public places while suffering from dangerous infectious disease should be proceeded against under section 126 of the Public Health Act, 1875.

(4.) The Sanitary Authority should, without delay, take active steps for placing the arrangements for the disposal of excrement on a better footing. All cesspits and midden privies causing nuisance should be dealt with as such, and should be replaced either by waterclosets or, where this is not practicable, by privies constructed in strict accordance with the byelaws of the Sanitary Authority.

The byelaws requiring the provision of a separate cistern, or flushing box of adequate capacity, in the case of waterclosets, and prohibiting the connexion of ash-pits with the sewers, should be rigidly enforced.

(5.) No unnecessary delay should be allowed to occur in providing such parts of the district as are imperfectly sewered with efficient means of sewerage. Provision should be made for the ample ventilation of all sewers. Ventilators should, in accordance with the official " Suggestions as to plans for main sewerage, drainage, &c.," be provided on all sewers at " intervals not greater than *one hundred yards*, or not fewer than " 18 fixed openings for ventilation should exist in each mile of main sewer. If, how-

“ ever, it is found that some of the ventilators are a nuisance, additional sewer ventilation should be provided at shorter intervals.”

Arrangements should also be made to secure the regular and effectual flushing of all sewers.

Wherever sewers have been provided the owners of all houses situated within the prescribed distance should be compelled to drain their premises into them by proper branch drains, of such construction as not to contaminate with foul air the atmosphere in and around houses.

(6.) All houses which, from faulty construction, want of ventilation, or disrepair, are in such a state as to be a nuisance and injurious to health, should be closed until they have been rendered fit for habitation. Such as cannot be rendered fit for habitation should not be suffered to be occupied.

Steps should be taken to put down overcrowding.

(7.) The Sanitary Authority should, with all convenient speed, cause all private streets which are in an unsatisfactory condition to be levelled, metalled, channelled, and sewered.

With a view to the prevention of nuisance and ill-health, the surfaces of courts and back yards, whether appertaining to one house or more, should be properly laid with suitable materials, and they should be provided with means for carrying away the surface water ; and in the event of nuisance actually arising from the want of such measures, the Sanitary Authority should, without delay, secure their adoption.

(8.) Means should be adopted to provide for the free entrance of air into the water mains during any periods of intermission which may occur, owing to repairs or otherwise.

(9.) The Sanitary Authority should give their earnest attention to the abatement of the many grave nuisances, excremental and other, existing within the district, and to this end should cause diligent inspection of it to be made, and should *enforce* the abatement of all conditions causing nuisance or injury to health which may be discovered within it. Where nuisances are caused or aggravated by the want or bad construction of structural appliances, or are of a kind likely to recur, the Authority should not be content with the mere abatement of them for the time being, but should require, and, if necessary, seek for a justice's order to enforce the execution of such works as may be necessary to prevent the recurrence of the nuisance.

(10.) A close supervision should be exercised over the erection of all new buildings, and the byelaws of the Authority should be most strictly enforced.

(11.) The enforcement of the byelaws recently obtained with regard to the construction and management of slaughter-houses is a matter deserving the special attention of the Authority. The Authority should also consider the advisability of constructing a public slaughter-house in some suitable locality.

(12.) Arrangements should be made with the Registrar of Births and Deaths for supplying the Medical Officer of Health with an immediate notice in the case of a death occurring from infectious disease within his district.
